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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
PEREZ, GUILLERMO

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 01/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/741,905	Applicant(s) HOPECK, JAMES FREDERICK	
	Examiner Guillermo Perez	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 November 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 16-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 16-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Information Disclosure Statement

The information disclosure statement filed November 12, 2002 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because each publication must be identified by date of publication. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 5, 7 and 16, 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Boer et al. (U. S. Pat. 5,053,663).

Referring to claim 1, Boer et al. disclose a winding support structure for use with a rotor, the support structure comprising:

an inner support ring (4);

an outer support ring (5,6,60) arranged around an outer circumference of the inner support ring (4);

first and second support blocks (14) coupled to the outer support ring (5,6,60) so that the outer support ring is arranged between the inner support ring and respective portions of the first and second support blocks coupled to the outer support ring; and

a lamination (1) coupled to the first and second support blocks (14) so that a slot is defined between the support blocks (14) and between the outer support ring (5,6,60) and the lamination (1) to receive a portion of a winding (3).

Referring to claims 5, 20, Boer et al. disclose another inner support ring (figure 2), another outer support ring arranged around an outer circumference of the another inner support ring, the another outer support ring being coupled to the first and second support blocks.

Referring to claims 7 and 21, Boer et al. disclose a third support block coupled to the outer support ring to define another slot between the second and third support blocks and between the outer support ring and the lamination, another portion of the winding being arranged in the another slot.

Referring to claim 16, Boer et al. disclose an apparatus for use with a rotor comprising:

an inner support ring;

an outer support ring arranged around an outer circumference of the inner support ring;

first and second support blocks coupled to the outer support ring so that the outer support ring is arranged between the inner support ring and respective portions of the first and second support blocks coupled to the outer support ring;

a lamination coupled to the first and second support blocks; and

a winding, a portion of the winding being arranged within a slot that is defined between the support blocks and between the outer support ring and the lamination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 2-4, 6, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. in view of Sato et al. (U. S. Pat. 4,740,724).

Boer et al. substantially teaches the claimed invention except that it does not show that a clearance space in the slot is filled with a RTV material. Boer et al. do not disclose that the inner support ring is a solid ring.

Sato et al. disclose that a clearance space in the slot is filled with a silicone rubber (column 4, lines 15-18). The invention of Sato et al. has the purpose of sealing the cavity and electrically insulate the embodiment.

It would have been obvious at the time the invention was made to modify the winding support structure of Boer et al. and provide it with the silicone rubber disclosed by Sato et al. for the purpose of sealing the cavity and electrically insulate the embodiment.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the inner ring as a solid ring since it has been held that

forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works,* 150 U. S. 164 (1893).

3. Claims 1-2, 5, 7, 16, 20-23, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolyukh et al. (SU 1746477 A1) in view of Okamoto et al. (U. S. Pat. 4,475,052).

Bolyukh et al. disclose a winding support structure for use with a rotor, the support structure comprising:

an inner support ring (3);

an outer support ring (4) arranged around an outer circumference of the inner support ring (3);

first and second support blocks (9) coupled to the outer support ring (4) so that the outer support ring (4) is arranged between the inner support ring (3) and respective portions of the first and second support blocks (9) coupled to the outer support ring (4); and

a lamination (13) coupled to the first and second support blocks (9) so that a slot is defined between the support blocks (9) and between the outer support ring (4) and the lamination (13) to receive a portion of a winding (2).

Bolyukh et al. disclose that the outer support ring (4) expands to produce a radially outward force against the support blocks (9) when the inner support ring (3) is moved axially with respect to the outer support ring (4).

Bolyukh et al. disclose an apparatus for use with a rotor comprising:

an inner support ring (3);

an outer support ring (4) arranged around an outer circumference of the inner support ring (3);

first and second support blocks (9) coupled to the outer support ring (4) so that outer support ring (4) is arranged between the inner support ring (3) and respective portions of the first and second support blocks (9) coupled to the outer support ring (4);

a lamination (13) coupled to the first and second support blocks (9); and

a winding (2), a portion of the winding (2) being arranged within a slot that is defined between the support blocks (9) and between the outer support ring (4) and the lamination (13).

Bolyukh et al. disclose a winding support structure for use with a rotor, the support structure comprising:

an inner support ring (3);

an outer support ring (4) arranged around an outer circumference of the inner support ring (3);

first and second support blocks (9), each having an inner radially-extending end and an outer radially-extending end, the respective inner radially-extending ends of the first and second support blocks (9) being coupled to the outer support ring (4); and

a lamination (13) coupled to the first and second support blocks (9) so that a slot is defined between the support blocks (9) and between the outer support ring (4) and the lamination (13) to receive a portion of a winding (2), the respective outer radially-

extending ends of the first and second support blocks (9) extending radially beyond an outer radially-extending end of the winding (2).

Bolyukh et al. disclose an apparatus for use with a rotor comprising:

an inner support ring (3);

an outer support ring (4) arranged around an outer circumference of the inner support ring (3);

first and second support blocks (9), each having an inner radially-extending end and an outer radially-extending end, the respective inner radially-extending ends of the first and second support blocks (9) being coupled to the outer support ring (4);

a lamination (13) coupled to the first and second support blocks (9); and

a winding (2), a portion of the winding (2) being arranged within a slot that is defined between the support blocks (9) and between the outer support ring (4) and the lamination (13), the respective outer radially-extending ends of the first and second support blocks (9) extending radially beyond an outer radially-extending end of the winding (2).

However, Bolyukh et al. do not disclose a superconducting rotor. Bolyukh et al. do not disclose that the inner support ring is a solid ring. Bolyukh et al. do not disclose another inner support ring, another outer support ring arranged around an outer circumference of the another inner support ring, the another outer support ring being coupled to the first and second support blocks.

Okamoto et al. disclose a superconducting rotor (column 1, lines 20-22). Okamoto et al. disclose that the support ring (3) is a solid ring. Okamoto et al. disclose

that the slot provides a clearance space between an outer radially-extending end of the winding (4) and an inner face of the lamination (11) defining the slot (figures 5, 7-8). The invention of Okamoto et al. has the purpose of securing the stator coils rigidly and reliably to the stator side.

It would have been obvious at the time the invention was made to modify the apparatus of Bolyukh et al. and provide it with the rotor and ring configuration disclosed by Okamoto et al. for the purpose of securing the stator coils rigidly and reliably to the stator side.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide another inner support ring and another outer support ring since it has been held that the mere duplication of the essential working parts of a device involves only routine skill in the art. *St Regis Paper Co. v. Bemis Co.,* 193 USPQ 8.

4. Claims 3-4, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolyukh et al. in view of Okamoto et al. as applied to claim 2 above, and further in view of Boer et al. (U. S. Pat. 5,053,663).

Bolyukh et al. and Okamoto et al. substantially teaches the claimed invention except that it does not show that the outer support ring is a split ring.

Boer et al. disclose that the outer support ring (5,6,60) is a split ring. The invention of Boer et al. have the purpose of providing extra support to the stator windings.

It would have been obvious at the time the invention was made to modify the apparatus of Bolyukh et al. and Okamoto et al. and provide it with the split ring for the purpose of providing extra support to the stator windings.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the inner ring as a solid ring since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works,* 150 U. S. 164 (1893).

5. Claims 6 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolyukh et al. in view of Okamoto et al. as applied to claims and 16 above, and further in view of Sato et al. (U. S. Pat. 4,740,724).

Bolyukh et al. and Okamoto et al. substantially teaches the claimed invention except that it does not show that a clearance space in the slot is filled with a RTV.

Sato et al. disclose that a clearance space in the slot is filled with a silicone rubber (column 4, lines 15-18). The invention of Sato et al. has the purpose of sealing the cavity and electrically insulating the embodiment.

It would have been obvious at the time the invention was made to modify the winding support structure of Bolyukh et al. and Okamoto et al. and provide it with the silicone rubber disclosed by Sato et al. for the purpose of sealing the cavity and electrically insulate the embodiment.

Response to Arguments

Applicant's arguments with respect to claims 1-7 and 16-27 have been considered but are moot in view of the new ground(s) of rejection.

The strips disclosed in Boer are portions of a split ring. Boer discloses block 14 placed between the outer rings 5-6,60 and the lamination.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

Guillermo Perez
Monday, January 27, 2003

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